

ccTLD Best Practices & Considerations

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نادلة الصراص

Naela Sarras

Internet Assigned Numbers Authority



ccTLD as a public trust

- ▶ ccTLDs are designated to operators who will operate them in the best interests of the local communities they serve.
- ▶ Operators should strive to tailor operations to best serve the users:
 - ▶ Ensure minimum technical standards are met
 - ▶ Strive for best practice
 - ▶ Operate with policy that suits local requirements

Things we'll consider

- ▶ How a ccTLD operator can be structured
- ▶ Best Current Practices
- ▶ Interacting with ICANN

ccTLD Structures

Some options

- ▶ Government?
- ▶ Not for profit?
- ▶ Outsource?

- ▶ Most common:
 - ▶ Not for profit private organisation
 - ▶ Appropriate membership from the community
 - ▶ Chartered for limited scope
 - ▶ Some kind of liaison with the government
 - ▶ Often light regulatory oversight

Sales model

- ▶ Direct registration
 - ▶ No middle man - easier to control most aspects of registration
- ▶ Registry-registrar model
 - ▶ Requires an interface between registry and registrar
 - ▶ Offloads end-user interface from registry
- ▶ Both

Scope

- ▶ Local or Global sales?
- ▶ Decide what best serves local community
- ▶ For global, consider legal aspects

Best Practices

Preface

- ▶ These are some highlighted points from a few key documents on best practice
- ▶ It is not exhaustive
- ▶ There is a wealth of information on ccTLD Operations out there
 - ▶ Check meeting proceedings; regional organisation websites

RFC 2870 - Root Server Name Operational Requirements

- ▶ Document designed for Root Servers
- ▶ Still some valuable advice for TLD operators
 - ▶ root servers and TLD servers aren't that different!

Server Considerations

- ▶ Must run servers that supports technical standards
- ▶ Must handle load 3x the measured peak
- ▶ Diverse bandwidth to support above
- ▶ Must answer authoritatively, and NOT be recursive
- ▶ Can't block access from a valid Internet host
- ▶ Shouldn't support AXFR (zone transfer)

Security Considerations

- ▶ Physical security
 - ▶ Limited to a specific set of individuals
- ▶ Power continuity for 48 hours
- ▶ Fire detection and retardation
- ▶ Backups
- ▶ Don't provide other services on the servers (mail, ftp, web etc.)
- ▶ Keep on a separate network segment from public hosts
- ▶ Log attempts at intrusion
- ▶ Set your reverse DNS

Communications

- ▶ Coordinate downtime between nameserver operators
- ▶ Coordinate backups between servers; keep backups off site
- ▶ Exchange logs and statistics between nameserver operators
- ▶ Nameserver operator personnel should be on call 24x7

RFC 2182 - Selection and Operation of Secondary DNS Servers

- ▶ Don't place all on the same LAN/building/segment
- ▶ Host offline doesn't mean DNS doesn't matter!
- ▶ How many? 4 or 5 is probably good rule for TLDs, varies depending on circumstances
 - ▶ Note: There is roughly a hard limit of 13, and of course there should be more than 1!

ccTLD Best Current Practice Draft

- ▶ A document in progress for a number of years
- ▶ Tries to describe some of the common practices of ccTLDs

Human Resources

- ▶ Administrative Point of Contact
 - ▶ Responsible for making clear rules for domain policy and operation.
 - ▶ Should represent the local Internet community and ensure ccTLD run for benefit of country and its citizens.
- ▶ Technical Point of Contact
 - ▶ Maintains the zone and makes sure systems run
- ▶ Programmers and Technical Staff
 - ▶ DNS experts, UNIX administrators should be in the team
- ▶ Finance and Billing
 - ▶ If you are charge fees...
- ▶ Lawyers
 - ▶ A reality if you trade globally

Structuring the TLD

- ▶ Flat or hierarchical?
 - ▶ Flat - simpler, equal access
 - ▶ Hierarchical - more domains, less disputes
 - ▶ Difficult to change later
- ▶ Two (.co.xy) or Three (.com.xy) TLDs?
 - ▶ Matter of preference, really
- ▶ Distributed distribution?
 - ▶ Delegating sub domains to other parties
 - ▶ More complicated administration for small registries

Technical Requirements for Registry

- ▶ Secondary Servers
- ▶ Networks (redundant)
- ▶ Physical and Electronic Security
- ▶ Quality of Service (24/7 availability!)
- ▶ DNS software (BIND, NSD, etc.)
- ▶ Registry software
- ▶ Diagnostic tools (ping, traceroute, zonecheck, dig)
- ▶ Registry Registrar Protocol

Other considerations

- ▶ Dispute Resolution
 - ▶ Local law prevails
 - ▶ Alternate Dispute Resolution (ADR) designed to be more lightweight
 - ▶ UDRP is often used as a model
 - ▶ <http://www.icann.org/udrp/udrp.htm>

Other considerations

- ▶ Regional organisations
 - ▶ APTLD (www.aptld.org)
 - ▶ CENTR (www.centri.org) - Your local group
 - ▶ LACTLD (www.lactld.org)
 - ▶ AfTLD (www.aftld.org)
- ▶ Country Code Network Operators Group
 - ▶ www.ccnog.org

Interacting with ICANN

ICANN

Interesting ICANN parts for ccTLDs:

- ▶ ccNSO
- ▶ Accountability Frameworks
- ▶ ICANN Meetings
- ▶ Liaisons

ccNSO

- ▶ Country Code Name Supporting Organisation
- ▶ The mechanism for ccTLDs to participate in ICANN's policy processes
 - ▶ Reviews on documents that govern ccTLDs will occur here
- ▶ Any ccTLD can join. No cost involved.
- ▶ <http://ccnso.icann.org/>

Accountability Frameworks

- ▶ Simple lightweight agreement on the services each will provide
 - ▶ Reflects the key elements of mutual concern identified by the ccNSO
 - ▶ Mutual recognition and commitments by both parties
 - ▶ Covers dispute resolution and termination
 - ▶ Termination clause
- ▶ Does not affect rights, or the service ICANN will provide
- ▶ Can be tailored to local requirements or circumstances

Why sign?

- ▶ Formalises relationship between ICANN and ccTLD
- ▶ Provides clarity on what to expect
- ▶ Shows commitment to a community-based coordination of the global interoperable Internet

If you are interested...

- ▶ ICANN staff responsible for these can speak to you about what it involves and what your needs are.

ICANN Meetings

- ▶ The main policy forums for DNS governance
- ▶ Held 3 times a year, rotating between 5 regions
- ▶ Free to come to and participate in
- ▶ Often has side meetings (i.e. regional meetings)
- ▶ Next meetings: Sao Paulo, Brazil; Lisbon, Portugal.

Liaisons

- ▶ IANA Liaison
 - ▶ Kim Davies <kim.davies@icann.org>
- ▶ Regional Liaison
 - ▶ Baher Esmat <baher.esmat@icann.org>
- ▶ Update us with what you're doing. Keep your IANA details up to date!

More information

Sources for information

- ▶ RFC 1591 - ccTLD governance
 - ▶ <http://www.rfc-editor.org/rfc/rfc1591.txt>
- ▶ RFC 2870 - Root Server BCP
 - ▶ <http://www.rfc-editor.org/rfc/rfc2870.txt>
- ▶ Accountability Frameworks
 - ▶ <http://ccnso.icann.org/announcements/announcement-06jan06.html>
- ▶ ccTLD Best Current Practice Draft
 - ▶ <http://www.tinyurl.com/wdvqq>
 - ▶ Currently a draft under development, comments welcome to the authors.

Thankyou for your attention!

Kim Davies

kim.davies@icann.org

